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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,851	03/22/2004	Thomas R. Apel	TRQ-09315-1C	2469
22888	7590	07/06/2004	EXAMINER	
BEVER HOFFMAN & HARMS, LLP TRI-VALLEY OFFICE 1432 CONCANNON BLVD., BLDG. G LIVERMORE, CA 94550			TAKAOKA, DEAN O	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/806,851	APEL, THOMAS R.	
	Examiner	Art Unit	
	Dean O Takaoka	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-31 and 36-39 is/are allowed.
- 6) ☒ Claim(s) 32 is/are rejected.
- 7) ☒ Claim(s) 33-35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/22/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mourant et al. (US Patent No. 6,396,362) in view of Gutierrez (US Patent No. 5,969,590) prior art supplied by the Applicant.

Claim 32:

Mourant et al. (best shown in Figs. 8 and 8A) shows a transmission line element comprising: a plurality of metal layers (defined as the layers of the primary P and secondary S windings shown in Fig. 8A), each of the metal layers being separated from an adjacent metal layer by at least one dielectric layer (an insulative material placed between layers – col. 4, lines 8-10 where any insulator being or having a dielectric constant); and a plurality of parallel conductors each comprising at least two parallel transmission lines in an electrical connection with one another (where primary windings P and secondary windings S are in parallel, also connected by vias between layers), each of the transmission lines being formed in one of the metal layers, where at least one of the transmission lines of each conductor is in a different metal layer than another of the transmission lines of the same conductor (where P and S are in different layers), and where each of

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the at least two transmission lines in each conductor is edge-coupled (inherent where the primary and secondary wings are adjacent to each other, thus edge coupled; where coupling of adjacent primary and secondary windings is shown by K in Fig. 9; further where col. 3, lines 47-59 teaches coupling K of the primary and secondary) to at least one transmission line of another conductor and broadside-coupled (col. 4, lines 8-10) to at least one transmission line of another conductor but is silent with respect to the specific package of the circuit.

Gutierrez shows a similar transmission line element where the circuit is in a specific well-known art-recognized equivalent integrated circuit package (abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the generic package disclosed by Mourant et al. with the specific well-known art-recognized equivalent integrated circuit package disclosed by Gutierrez. Such a modification would have been a mere substitution of using a specific well-known art-recognized equivalent integrated circuit package; further where Mourant et al. addresses the desire of integrated circuits to employ differential circuits (e.g. balun) for improving isolation and common mode signals and where size reduction is desirable; where the package of Gutierrez provides shielding and reduces resistive losses (col. 1 all) thus suggesting the obviousness of the modification.

Allowable Subject Matter

Claims 14 – 31 and 36 – 39 are allowed.

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The following is a statement of reasons for the indication of allowable subject matter:

Claims 14, 27 and 36:

Mourant et al. and/or Gutierrez does not show the first and second conductors each having a plurality of first and second electrical connections through which the two transmission lines of the different metal layers are electrically connected (claim 1); where the first and fourth transmission lines are electrically connected through at least two vias, and the second and third transmission lines are electrically connected through at least two vias (claim 27); or where a linear distance along the respective conductors between adjacent pairs of interconnects is less than 30 degrees of an operating frequency of a transformer including the first and second conductors (claim 36).

Claims 33 – 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (571) 272-1772. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

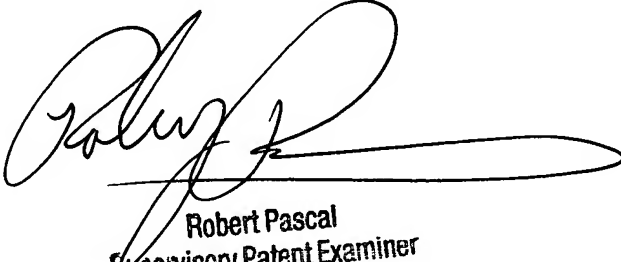
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The

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fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dot
June 30, 2004



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800